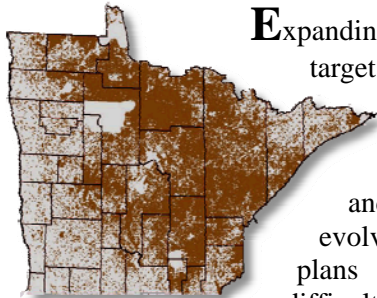




Acid Mine Drainage (AMD)

Metallic Sulfide Mining # 3

Sulfide Mining Projects in Minnesota



State Mineral Interest

Expanding exploration targets, frequent changes in ownership, and continually evolving mine plans make it difficult to predict the degree of

disruption and environmental degradation that the DNR's planned "*Copper-Nickel Sulfide Mining District*" will bring to Northeastern Minnesota. The maps and information on this page give a snapshot of the situation in 2011, but much of what is presented here can be expected to change in the coming months and years.

What is *sulfide mining*? Sulfide ores contain heavy metals (such as copper or nickel) that are bonded to sulfur, forming sulfide minerals. When exposed to air and moisture, a chemical reaction generates sulfuric acid that can leach into the surrounding environment and cause the release of the metals into streams and lakes at levels that are toxic to fish and other aquatic life. This phenomenon is known as *Acid Mine Drainage (AMD)*.

The First Three

Three large copper-nickel sulfide projects are in the development stage. These potential mines are located in the Babbitt-Ely area, to the east of the current taconite mines and within the boundaries of the Superior National Forest. If all the mines are permitted, they will extend in a line almost 50 miles long, beginning at the BWCAW boundary south of Ely.

PolyMet Mining Company's NorthMet Mine

The project that is farthest along is PolyMet Mining Company's NorthMet Mine, which is currently undergoing environmental review. A Draft Environmental Impact Statement (DEIS) was released in October 2009, but was given an unsatisfactory rating by the U.S. EPA, which has oversight authority over the Minnesota Pollution Control Agency and Army Corps of Engineers implementation of the Clean Water Act. PolyMet and the regulatory agencies now say that a Supplemental DEIS will be released for public review in the second quarter of 2012. The company hopes to receive

permits and begin construction by early 2013, but this is of course subject to a mine plan and EIS that show sufficient protection of the environment, a target that the company has not yet been able to meet. International commodities trading giant Glencore is a major partner in PolyMet's NorthMet Project.

The U.S. Forest Service does not allow strip mines on federal land within the Superior National Forest where the NorthMet mine would be located. Therefore, a land exchange is required before PolyMet's NorthMet open pit strip mine can be permitted.

The environmental impacts of a land exchange are to be included in the Supplemental DEIS.

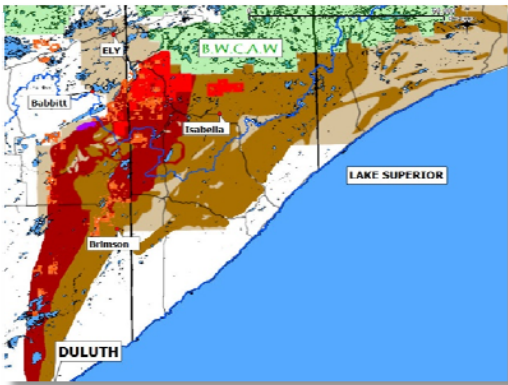


Minnesota DNR's planned *Copper-Nickel Sulfide Mining District*

The Twin Metals Projects

Twin Metals is a joint venture targeting what were originally four separate ore bodies: the Nokomis, Birch Lake, Maturi, and Spruce Road deposits. The companies involved in this venture include Duluth Metals, Antofagasta, and Franconia.

Together, these deposits amount to by far the largest of the mining projects in the planning stages. The potential mining area covers 25,000 acres, or 39 square miles, and could become one of the largest copper-nickel mines in the world. This project begins just south of the BWCAW south of Ely, and much of the ore is located under Birch Lake. The company is currently investigating a range of scales and mining scenarios in preparation for development of a mine plan and permit applications. It plans to continue drilling operations with six drilling rigs through the summer. Barring unforeseen circumstances, Twin Metals is likely to begin the permit application and environmental review process within the next three years.



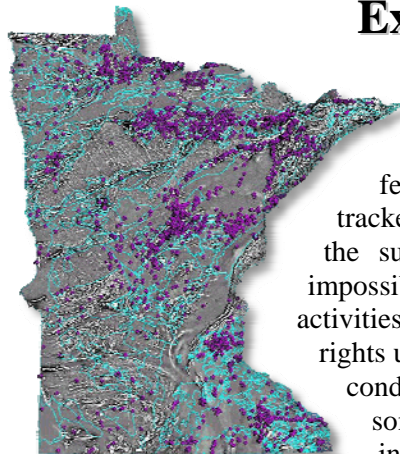
Duluth Complex

Teck Cominco's Mesaba Project

The third of the "first three" is Teck Cominco's Mesaba Project, located between the NorthMet project to the south and the Twin Metals projects to the north. This mine would be located in the headwaters of the Partridge River, which will already be heavily impacted by the NorthMet Mine if it is permitted. Teck Cominco did extensive bulk sampling in 2008-09, and has since been working on process development.



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Exploratory Drill Sites

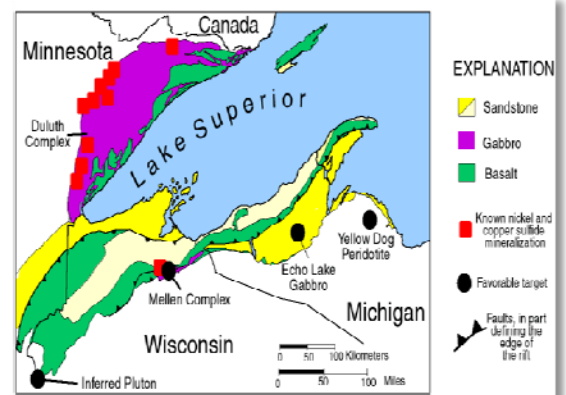
exploration, with an additional 22,000 acres requested in April 2011.

The epicenter of exploration is the Birch Lake/South Kawishiwi area in the Superior National Forest. Five exploration companies are currently seeking exploration permits on 44,000 acres of USFS land. This is in addition to leases already held, which indicate a more advanced stage of exploration. US Forest Service maps show a "high interest" area within the boundaries of the Forest that is about 40 miles long and 15 to 20 miles wide. In the same area, Duluth Metals is starting an extensive exploratory drilling program this summer on 31,000 acres adjacent to its Twin Metals project. This would be in addition to the 25,000 acres it has already slated for mine development. Encampment Resources, Prime Meridian Resources, and Lehmann Exploration are also conducting advanced exploration activities that extend from the Kawishiwi to Isabella, and into the Toimi/Brimson area.

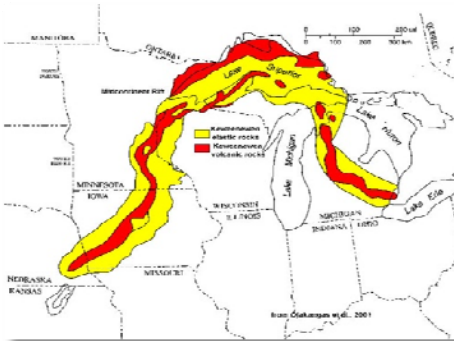
Exploration

In addition to projects in the development stages, exploration activities have mushroomed in the past few years. Because exploration activities are tracked differently depending on ownership of the surface and mineral rights, it is virtually impossible to know the full extent of exploration activities. The State of Minnesota owns the mineral rights under much of Northeastern Minnesota, and conducts a minerals leasing program that gives some indication of the degree and locations of interest. In 2010, about 145,000 acres of state mineral rights were under leases for exploration, with an additional 22,000 acres requested in April 2011.

Lake Superior Midcontinent Rift



Great Lakes Region Midcontinent Rift



BWCAW south to Mille Lacs and as far west as Baudette, and points beyond.

In other regions of Minnesota, the farthest along in exploration activities appears to be Kennecott's (Rio Tinto) extensive drilling program in Aitkin and Carlton Counties. Minerals Processing Corporation and HTX are also conducting exploration activities in this area. The new sulfide mining district would reach far beyond the current Iron Range, from the border of the



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